

## Public Comments

The following comments were provided by members of the public and were considered during the technical review of this application.

<b>No.</b>	<b>Comment</b>	<b>Comment Date</b>
1	Test	03/30/2015
2	<p>This Form 2 Drilling permit application is deficient and should be rejected or denied for the following reasons:</p> <p>1) Pursuant to Rule 604.c.(2)E.i. requiring an operator proposing a multi-well production facility within 1000 feet of a building unit to locate the facility as “far as possible” from homes.</p> <p>-Absence of supporting documentation from operator as to siting “as far as possible” from homes.</p> <p>-No “alternative location analysis” or “siting rationale” submitted</p> <p>Recommended/Requested Actions:</p> <p>-At least one additional 20-day comment period extension</p> <p>-The COGCC hold a public hearing on the requested Form 2A permit, providing local community citizens their only opportunity for due process under current law.</p> <p>-If permit(s) approved, COGCC require mitigation to reduce impacts. Such mitigation should include:</p> <p>Limitations on the daily time periods during which operations vehicles and traffic are allowed, from 7:00AM to 7:00PM only.</p> <p>The utilization of remote fracking operations technology, as developed by Anadarko, to the extent possible, but at a minimum to include piped-in water.</p> <p>All operations be subject to an instrument-based leak detection and repair inspection. Employ VOC destruction or control technologies with at least 95% efficiency on all tanks capable of emitting over 2 tons of VOCs annually. Any un-repaired leak over 10,000 ppm of hydrocarbons after 24 hours results in a shut down until repaired.</p> <p>Automated ground water monitoring systems with data available to non-operator personnel in real time.</p> <p>Required use of electric-powered engines for all motors, compressors, pumps, and production systems to minimize noise levels.</p> <p>2) Pursuant to COGCC Mission Statement: “exploration and production... in a manner consistent with the protection of public health, safety and welfare</p> <p>Pursuant to COGCC Strategic Plan/Goals: “Prevent and mitigate adverse impacts to public health, safety, welfare and the environment.”</p> <p>COGCC has not adequately assessed the risks to public health and welfare and, as such, issuance of this permit is contrary to the COGCC’s duty to act in accordance with its stated Mission and Goals to protect public health and environment. Therefore, this permit should be denied.</p> <p>Toxic risks to the community’s health and well-being include the following*:</p> <p>Benzene poisoning</p> <p>Diesel fumes from app. 10,000 total truck trips (carcinogen)</p> <p>Formaldehyde exposure</p>	04/24/2015

Hydrogen Sulfide exposure

24/7 Noise Light

Particulate exposure

The appropriation and partial removal from community use of the semi-private Rd 18

Contamination of local well-water supplies

Respiratory problems, rashes, lesions, dizziness, headaches.

Birth defects, lowered APGAR scores and newborn birth weights

Newborn livestock deformities

\*Supporting documentation on public health and environmental risks:

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde and nickel) have the potential to contribute to mutations in cells that can lead to cancer. In fact, long-term exposure to diesel exhaust particles poses the highest cancer risk of any toxic air contaminant evaluated by OEHHA. ARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, ARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 excess cancers (beyond what would occur if there were no diesel particles in the air) in a population of 1 million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from diesel exhaust that are similar to those developed by OEHHA and ARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine-particle pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children.

Like all fuel-burning equipment, diesel engines produce nitrogen oxides, a common air pollutant in California. Nitrogen oxides can damage lung tissue, lower the body's resistance to respiratory infection and worsen chronic lung diseases, such as asthma. They also react with other pollutants in the atmosphere to form ozone, a major component of smog.

[http://oehha.ca.gov/public\\_info/facts/dieselfacts.html](http://oehha.ca.gov/public_info/facts/dieselfacts.html)

Benzene causes problems in the blood. People who breathe benzene for long periods may experience harmful effects in the tissues that form blood cells, especially the bone marrow. These effects can disrupt normal blood production and cause a decrease in important blood components. A decrease in red blood cells can lead to anemia. Reduction in other components in the blood can cause excessive bleeding. Blood production may return to normal after exposure to benzene stops. Excessive exposure to benzene can be harmful to the immune system, increasing the chance for infection and perhaps lowering the body's defense against cancer.

Long-term exposure to benzene can cause cancer of the blood-forming organs. This condition is called leukemia. Exposure to benzene has been associated with development of a particular type of

leukemia called acute myeloid leukemia (AML). The Department of Health and Human Services has determined that benzene is a known carcinogen (can cause cancer). Both the International Agency for Cancer Research and the EPA have determined that benzene is carcinogenic to humans.

Exposure to benzene may be harmful to the reproductive organs. Some women workers who breathed high levels of benzene for many months had irregular menstrual periods. When examined, these women showed a decrease in the size of their ovaries. However, exact exposure levels were unknown, and the studies of these women did not prove that benzene caused these effects. It is not known what effects exposure to benzene might have on the developing fetus in pregnant women or on fertility in men. Studies with pregnant animals show that breathing benzene has harmful effects on the developing fetus. These effects include low birth weight, delayed bone formation, and bone marrow damage.

We do not know what human health effects might occur after long-term exposure to food and water contaminated with benzene. In animals, exposure to food or water contaminated with benzene can damage the blood and the immune system and can cause cancer.

<http://www.atsdr.cdc.gov/phs/phs.asp?id=37&tid=14>

Air concentrations of volatile compounds near oil and gas production: a community-based exploratory study: Results: Levels of eight volatile chemicals exceeded federal guidelines under several operational circumstances. Benzene, formaldehyde, and hydrogen sulfide were the most common compounds to exceed acute and other health-based risk levels. Conclusions: Air concentrations of potentially dangerous compounds and chemical mixtures are frequently present near oil and gas production sites. Community-based research can provide an important supplement to state air quality monitoring programs.

<http://www.ehjournal.net/content/13/1/82>

From the COMPENDIUM OF SCIENTIFIC, MEDICAL, AND MEDIA FINDINGS DEMONSTRATING RISKS AND HARMS OF FRACKING (UNCONVENTIONAL GAS AND OIL EXTRACTION (Concerned Health Professionals of NY)

<http://concernedhealthny.org/wp-content/uploads/2014/07/CHPNY-Fracking-Compendium.pdf>

First: A new study on fracking-related air pollution in northeastern Colorado: even though the volume of toxic emissions per well might be decreasing, overall air quality in the shale field continues to deteriorate as the rapid, continuing increase in the number of wells cancels out improvements to air quality brought about by more stringent regulations. (See footnote 4.) Similarly, the results of a new study from Texas raises the possibility that methane can migrate into aquifers through unseen cracks and fissures in the rock surrounding the wellbore in ways that no cementing and casing protocols, however strictly applied, can prevent. (See

footnotes 55 and 56.)

New findings from West Virginia show how unmapped, long-abandoned wells—including those drilled generations ago—can become re-pressurized during nearby fracking operations and serve as conduits for the contamination of drinking water. (See footnote 57.) A new study by Princeton researchers working in Pennsylvania found that, many decades after their abandonment, plugged and unplugged wells alike leaked significant amounts of methane into the atmosphere. There are an estimated three million abandoned oil and gas wells in the United States; the locations of many are unmapped and unknown. (See footnotes 265 and 266.) No set of regulations can obviate these problems.

Second, drinking water is at risk from drilling and fracking activities and associated waste disposal practices. As documented by the Pennsylvania Department of Environmental Protection in a review of its records, 234 private drinking water wells in Pennsylvania have been contaminated by drilling and fracking operations during the past seven years. These do not include drinking water wells contaminated by spills of fracking wastewater or wells that went dry as a result of nearby drilling and fracking activities. (See footnotes 68 and 69.) In California, the injection of liquid fracking waste directly into groundwater aquifers threatens contamination of large numbers of public drinking water supplies. (See footnote 78.)

Third, drilling and fracking emissions often contain strikingly high levels of benzene. A potent human carcinogen, benzene has been detected in the urine of wellpad workers (at levels known to raise risks for leukemia), in private drinking water wells contaminated by fracking operations, and in ambient air at nearby residences. In some cases, concentrations have far exceeded federal safety standards.

Such exposures represent significant public health risks. (See footnotes 3–8, 12, 57, 174.)

Fourth, public health problems associated with drilling and fracking are becoming increasingly apparent. Documented indicators variously include increased rates of hospitalization, ambulance calls, emergency room visits, self-reported respiratory and skin problems, motor vehicle fatalities, trauma, drug abuse, infant mortality, congenital heart defects, and low birth weight. (See footnotes 192–205.)

Fifth, natural gas is a bigger threat to the climate than previously supposed. Methane is not only a more potent greenhouse gas than formerly appreciated, real-world leakage rates are higher than predicted. Within the last five months, multiple teams of independent scientists have published data on fugitive emissions that, all together, call into question earlier presumed climate benefits from replacing coal with natural gas. Further, evidence increasingly suggests that the natural gas abundance brought by fracking is slowing the transition to renewable energy and is thus exacerbating, rather than mitigating, the climate change crisis. (See footnotes 313–318.)

Total: 2 comment(s)